

## Article

# Space Militarisation and International Security: The Next Frontier of Global Conflict

Akie Opuene Hart<sup>1\*</sup>, Ferdinand Amabibi<sup>2</sup>

1,2 Faculty of Social Sciences, Department of Political and Administrative Studies, University of Port Harcourt, Nigeria

\* Correspondence: [akiehart@yahoo.com](mailto:akiehart@yahoo.com)

**Abstract:** The increasing militarization of space presents a significant threat to international security. As nations like the United States, China, and Russia pursue advanced space-based military technologies, space has transitioned from a peaceful frontier to a contested domain. These developments threaten both space and terrestrial security, with far-reaching implications for international relations and global peace. It is within this social milieu that this study investigated the strategic motivations behind space militarization, assess its impact on international security, and evaluate the effectiveness of current international frameworks. The study is anchored in Neo-realism (Structural Realism) and adopted a qualitative design. Data were analyzed using content analysis to explore geopolitical drivers and security concerns. The study found that space militarization exacerbated geopolitical competition, increases the risk of conflict, and highlights the limitations of existing treaties in regulating space-based militarization. The findings underscored the urgency of developing stronger international governance frameworks to mitigate space-related threats. Strengthen international cooperation through updated treaties that regulate space weaponization and establish enforceable norms for peaceful space conduct

**Keywords:** Space, Militarisation, International Security, Global Conflict, International Relations, and Global Peace

## 1. Introduction

Space militarisation has emerged as a significant concern in modern geopolitics, where nations increasingly view outer space as a potential battleground for securing strategic advantages. As technology advances, space has become an essential domain for national security, communication, and surveillance operations, leading major powers to develop and deploy military assets such as satellites for intelligence gathering and missile defense systems. This trend is further fueled by geopolitical rivalries, with countries like the U.S., China, and Russia investing heavily in space defense capabilities. The increasing reliance on space-based systems for military purposes has heightened concerns about the risk of space-based conflicts, particularly in the absence of robust international regulations to prevent weaponisation (Johnson, 2022; Weeden, 2021). While treaties like the Outer Space Treaty aim to regulate space activities, the growing militarisation of space continues to challenge global security and stability.

International security is a dynamic and multifaceted concept that addresses the protection of states and global systems from threats that transcend national borders. In an increasingly interconnected world, issues such as terrorism, cyber warfare, climate change, and nuclear proliferation challenge traditional security frameworks and require

**Citation:** Hart, Akie Opuene. Space Militarisation and International Security: The Next Frontier of Global Conflict. Modern Journal of Social Sciences and Humanities 2024, 3(5), 99-107

Received: 04<sup>th</sup> Agst 2024

Revised: 17<sup>th</sup> Agst 2024

Accepted: 20<sup>th</sup> Sept 2024

Published: 30<sup>th</sup> Oct 2024



**Copyright:** © 2024 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

cooperative approaches. Nations, international organizations, and non-state actors collaborate to manage these risks, utilizing diplomacy, military alliances, and economic sanctions to maintain stability. Global power shifts, particularly with the rise of China and the resurgence of Russia, have further complicated the international security landscape, intensifying competition and strategic uncertainty (Jones, 2021; Williams, 2022). Furthermore, emerging technologies and the militarisation of new domains, like cyberspace and outer space, have introduced additional complexities to maintaining global peace and security. The evolving nature of these threats underscores the importance of robust, flexible international security mechanisms.

### **Statement of the Problem**

Space militarization represents a growing threat to international security, signaling a shift from peaceful space exploration to a potential battlefield in the cosmos. With the increasing dependency on space-based assets for communication, surveillance, and military operations, the notion of space as a sanctuary has become obsolete. Countries such as the United States, Russia, and China have escalated efforts to develop and deploy space-based weapons systems, heightening tensions and the risk of conflict. The strategic advantage offered by space technologies can decisively influence the outcome of terrestrial conflicts, prompting a race for space dominance. Consequently, the lack of comprehensive international regulations governing the militarization of space has further exacerbated this problem, creating a precarious security environment in which miscalculations could easily escalate into global conflicts (Dolman, 2005; Johnson-Freese, 2016).

The major powers, notably the United States and China, have initiated extensive programs focused on anti-satellite (ASAT) weapons, space-based lasers, and satellite jamming technologies, which further complicate international security frameworks. These advancements increase the likelihood of a space arms race, as countries feel compelled to enhance their space capabilities to defend against potential threats. The absence of a universally binding treaty on the weaponization of space leaves room for these nations to justify their actions as defensive measures, while their rivals view them as aggressive postures. The lack of transparency in space activities compounds this issue, as countries are often unaware of the intentions behind the deployment of certain technologies, leading to mutual distrust and the potential for miscalculation. As space becomes more militarized, it could exacerbate existing geopolitical tensions, transforming space into the next frontier of global conflict (Mutschler, 2020).

Another key concern is the risk of space debris generated by military activities. The destruction of satellites or other space assets during conflicts can create debris fields that threaten all nations' access to space. This problem, known as the Kessler Syndrome, posits that the density of objects in low Earth orbit could reach a tipping point where collisions between objects generate more debris, leading to a cascading effect of further collisions. This scenario could render certain orbital paths unusable for decades, hampering both civilian and military space operations. The militarization of space could, therefore, jeopardize not only security but also scientific advancements and the economic benefits derived from space-based technologies. Countries must weigh the potential consequences of space militarization against the risks it poses to humanity's shared interest in maintaining a stable and secure space environment (Weeden, 2020; Muirhead & Lal, 2019).

In addition to the technological and environmental risks, the legal frameworks governing space remain outdated and insufficient for addressing the new challenges posed by militarization. The Outer Space Treaty of 1967, while prohibiting the placement of nuclear weapons in space, is vague regarding other forms of weaponry and fails to account for the rapid advancements in space technology. Furthermore, the treaty lacks enforcement mechanisms, leaving it up to individual nations to self-regulate their actions in space. This situation has led to a proliferation of military space programmes with little

oversight, increasing the potential for conflict (Johnson-Freese, 2016; Weeden, 2020). The international community has been slow to respond to these emerging threats, with attempts at developing new treaties often stalling due to conflicting national interests. The failure to update and enforce space governance regimes could have dire consequences for global security (Hitchens, 2019).

The intersection of space militarization and global power politics raises profound ethical and strategic questions. How can nations cooperate in space when terrestrial conflicts continue to deepen divisions between them? Can a balance be struck between national security interests and the collective need to preserve space as a global common? These questions highlight the complexities of achieving meaningful agreements on space security, as nations prioritize their sovereignty and defense capabilities over collective governance. The growing presence of private companies in space, such as SpaceX, further complicates the issue, as these entities operate outside the traditional frameworks of state responsibility. This fragmentation of power and authority in space could lead to a more chaotic and less secure environment, one in which the rules of engagement are unclear, and the risks of miscalculation are high (Dolman, 2005). The militarization of space not only exacerbates existing international tensions but also introduces new risks that could have catastrophic consequences for global security. As nations continue to invest in space-based weapons and defensive systems, the likelihood of an arms race in space grows, and with it, the potential for conflict. It is against this backdrop that this study was undertaken to examine impact of space militarisation on international security: The next frontier of global conflict.

### **Theoretical Underpinning**

The study is anchored in Neo-realism, also known as Structural Realism, a theory developed by political scientist Kenneth Waltz in his seminal work *Theory of International Politics* (1979). Neo-realism focuses on the international system's structure rather than the internal characteristics of states. It assumes that the international system is anarchic, meaning no central authority exists to regulate states' actions. States, as the primary actors, are rational and concerned primarily with their survival. This concern leads them to seek power and security, often through competition and conflict (Taliaferro et al., 2009; Reus-Smit & Snidal, 2021). In the context of space militarization, Neo-realism helps explain why nations, despite potential cooperation in space exploration, engage in competitive behaviors like developing space-based weapons and anti-satellite (ASAT) capabilities (Waltz, 1979; Glaser, 2022).

The main assumptions of Neo-realism that relate to space militarization include the concept of the security dilemma, where one state's efforts to enhance its security (e.g., by deploying space weapons) leads others to perceive a threat, prompting them to enhance their own military capabilities. This cycle of action and reaction fuels the militarization of space. Neo-realists argue that in the absence of global governance that effectively regulates space activities, states are compelled to act unilaterally to avoid strategic vulnerability. This explains why major powers like the United States, China, and Russia continue to invest heavily in space technologies for military purposes, as they seek to secure their positions in an increasingly competitive domain (Mearsheimer, 2001; Buzan, 2020).

The relevance of Neo-realism to the study of "Space Militarisation and International Security" lies in its ability to explain why states prioritize security over cooperation in space. The theory illuminates the rationale behind the growing militarization of space, particularly as states seek to protect their interests and deter potential adversaries. The anarchic structure of the international system compels nations to expand their military capabilities into space, despite the potential risks of conflict and destabilization. Neo-realism helps contextualize these behaviors by framing space as the next strategic frontier where power dynamics between major global players are increasingly contested

## 2. Materials and Methods

The study utilized a qualitative research approach, relying on secondary sources of data such as textbooks, academic journals, and reputable international news outlets like Aljazeera, CNN, BBC, and Reuters. These sources were selected for their relevance to global security issues, including space militarization. The collected data underwent thorough content analysis to identify patterns, themes, and implications relevant to space militarization and international security. This method was particularly suitable given the study's focus on analyzing existing geopolitical discourse and understanding the evolving dynamics of space as a potential conflict zone.

## 3. Results

### **Strategic motivations behind space militarisation and its drivers, including geopolitical competition and national security concerns.**

The militarization of space is driven by a complex set of strategic motivations, deeply rooted in geopolitical competition and national security concerns. As space becomes increasingly central to global communication, intelligence, and military capabilities, states are motivated to secure their dominance in this domain. The strategic implications of space technology, from satellite surveillance to potential offensive capabilities, are immense, prompting nations to invest heavily in the development and deployment of space-based military assets. This development is shaped by both competition among great powers and the desire to safeguard national security in an evolving global order.

#### **Geopolitical Competition as a Driver of Space Militarisation:**

Geopolitical rivalry is one of the most significant drivers of space militarization, particularly among major powers like the United States, China, and Russia. These nations see space as the next critical domain where technological dominance can translate into strategic superiority on Earth. For example, China's rapid advancements in space technology, including the launch of a crewed mission to its space station and its development of anti-satellite (ASAT) weapons, are perceived as direct challenges to U.S. space dominance. In response, the U.S. established the U.S. Space Force in 2019 to protect its interests and maintain an edge in space-related military and intelligence operations (Buzan, 2020). Such actions highlight how space is increasingly becoming a critical component of national defense strategies, with countries striving to secure their assets and deter potential adversaries.

The militarization of space also reflects the broader competition for global power and influence. Russia, for instance, has been actively testing space-based weapons, such as its recent ASAT missile test in 2020, which destroyed one of its own satellites. This test sent a clear signal about its capability to neutralize enemy satellites during conflicts, an essential tool in modern warfare where communication and surveillance depend heavily on satellite networks. Similarly, China's increasing investment in space-based infrastructure, including the BeiDou satellite navigation system, aims to reduce its dependency on the U.S.-controlled Global Positioning System (GPS), thus enhancing its strategic autonomy. These developments show how space is being militarized as a theater of geopolitical competition, where technological dominance translates into both terrestrial and strategic advantages (Mearsheimer, 2001).

#### **National Security Concerns and the Need for Strategic Space Capabilities:**

National security concerns are a major driving force behind the militarization of space, as states recognize the critical role that space-based assets, especially satellites, play in military operations. Satellites are indispensable for real-time intelligence, surveillance, communications, and navigation, making them strategic targets in the event of conflict

(Glaser, 2022). For example, the United States relies heavily on its GPS satellites for military coordination and missile guidance, making their protection a top priority. To safeguard these assets, nations like the U.S. have developed missile defense systems capable of intercepting threats in space. Similarly, China's investment in its BeiDou satellite system and Russia's ASAT capabilities exemplify how states are seeking to protect their space-based infrastructure while simultaneously developing offensive capabilities to disable adversary assets (Weeden, 2020). This arms race in space reflects the growing recognition that control over space is essential for national security, as space-based systems are increasingly integral to military operations.

The development of defensive and offensive space capabilities illustrates the concept of the security dilemma, where actions taken by one state to enhance its security prompt similar responses from others, creating a cycle of competition. For instance, Russia's ASAT missile test in 2020, which destroyed one of its own satellites, underscored its readiness to engage in space warfare if necessary. Such demonstrations of military capability, along with China's deployment of ASAT systems, have prompted the United States to enhance its space defense strategy, leading to the establishment of the U.S. Space Force in 2019. This organization is tasked with ensuring that American space assets are protected from potential attacks. These developments signal an escalating arms race in space, where nations are preparing for the possibility of conflict beyond Earth, driven by concerns over the vulnerability of their strategic space infrastructure (Mearsheimer, 2001).

#### **The Strategic Imperative of Space Dominance:**

The militarization of space is driven by the dual imperatives of geopolitical competition and national security concerns. As space becomes increasingly integrated into global military strategies, states are compelled to secure their dominance to protect their interests and deter potential adversaries. The lack of comprehensive international regulation in space exacerbates these dynamics, making the militarization of space a likely and ongoing trend in global security affairs. Given the strategic importance of space in modern warfare and the potential for conflict, it is essential for the international community to engage in meaningful dialogue and create frameworks that manage the risks associated with this militarization. Without such efforts, space could indeed become the next frontier of global conflict, with devastating consequences for international security (Taliaferro et al., 2009; Weeden, 2020).

## **4. Discussion**

### **The Potential Impact of Space Militarisation on International Security**

The militarization of space represents a growing concern for international security, with the potential to dramatically alter the dynamics of global power and conflict. As more countries develop space-based military capabilities, the once peaceful domain of space is becoming increasingly weaponized, raising fears about its destabilizing effects. The potential impact of space militarization includes the escalation of conflicts, the triggering of new arms races, and the disruption of global stability. This shift from cooperative space exploration to competitive militarization could have profound consequences for international relations, as space becomes a new frontier for strategic dominance.

#### **Escalation of Conflicts and the Risk of War:**

The militarization of space raises significant concerns regarding the escalation of conflicts, particularly as nations increasingly rely on space-based assets for military operations. These assets, which include communication, navigation, and intelligence-gathering satellites, are crucial to national security, making them prime targets in times of tension. As nations like the United States, China, and Russia develop anti-satellite (ASAT) weapons, the risk of pre-emptive strikes increases. For example, China's 2007 ASAT test,



which destroyed a defunct weather satellite, signaled its capacity to target crucial U.S. space assets, prompting fears of space becoming a potential battleground. This action raised alarms globally, as it demonstrated the vulnerability of space infrastructure to attack, driving the U.S. and other nations to invest in defensive and offensive space capabilities (Weeden, 2020). The absence of a comprehensive international treaty governing ASAT weapon use exacerbates the issue, allowing countries to justify their actions under the guise of defense (Glaser, 2022).

The risk of miscalculation in space further heightens the potential for conflict escalation. Given the critical role satellites play in modern warfare, any perceived threat to a nation's space assets could lead to pre-emptive strikes or retaliatory actions, quickly escalating into broader conflict. Kenneth Waltz's theory of structural realism is relevant here, as it posits that states, operating in an anarchic system, must act defensively to preserve their survival. In this context, space militarization intensifies the security dilemma, where one state's efforts to enhance its security by deploying or testing space weapons make others feel threatened, prompting them to do the same. For instance, following China's ASAT test, the U.S. accelerated the development of its space defense capabilities, including the creation of the U.S. Space Force in 2019, a dedicated military branch to ensure the protection of American space assets (Glaser, 2022). This cycle of action and reaction underscores the growing risks of space militarization, potentially leading to devastating consequences for global security if unchecked.

#### **Arms Races and the Proliferation of Space Weapons:**

The militarization of space has intensified an arms race, as major powers, including the United States, China, and Russia, compete to develop advanced space-based weapons systems. The concept of the security dilemma, as outlined by John Mearsheimer's (2001) offensive realism, illustrates how one state's efforts to improve its security prompts others to do the same, leading to a cycle of competition. A prime example of this is the U.S. Space Force's establishment in 2019, which was, in part, a response to growing Chinese and Russian advancements in anti-satellite (ASAT) technologies. The Outer Space Treaty (OST) of 1967 prohibits the placement of nuclear weapons in space but does little to regulate conventional weapons, leaving room for unchecked military activities in space (Buzan, 2020). The lack of enforcement mechanisms within this treaty has allowed countries to rapidly pursue space-based military projects without substantial regulatory oversight, increasing the risks associated with space warfare.

This arms race, fueled by national security concerns and technological advancements, has significant implications for global security. For instance, in 2020, Russia conducted a direct-ascent ASAT missile test, destroying one of its own satellites. This action, perceived as a demonstration of Russia's capability to disable enemy satellites, spurred heightened tensions and a corresponding response from other space-faring nations, particularly the United States and China. As these powers develop more sophisticated space weapons, the potential for misunderstandings, miscalculations, or accidents that could escalate into broader conflict becomes more pronounced (Johnson-Freese, 2016). The current framework of international treaties, such as the OST, lacks the regulatory rigor necessary to prevent a full-blown space arms race, highlighting the urgent need for updated, enforceable agreements that can adequately address these emerging threats.

#### **Disruption of Global Stability and International Relations:**

The militarization of space poses a serious threat to global stability, as it erodes the trust and cooperative frameworks that have historically characterized space exploration. Space has long been viewed as a global common, open for peaceful research and shared technological advancement, exemplified by collaborative projects like the International Space Station (ISS), which involves multiple nations working together. However, the

increasing prioritization of military objectives in space, particularly with nations like the U.S., China, and Russia developing space-based weapons and anti-satellite technologies, threatens this collaborative spirit. For instance, in 2020, the United States accused Russia of testing an anti-satellite weapon, escalating tensions and fostering suspicion between space-faring nations. This kind of militarization could lead to a significant breakdown in international cooperation, making countries less inclined to share space-related technologies or engage in joint space missions (Buzan, 2020).

Beyond undermining cooperation, the militarization of space could have destabilizing ripple effects across the global geopolitical landscape. The interconnectedness of space-based systems, such as communication, navigation, and surveillance satellites, means that conflict in space can have immediate consequences on Earth. If nations view each other's space assets as strategic military targets, this could create new flashpoints for conflict and exacerbate existing terrestrial geopolitical tensions. As Barry Buzan's work on international security emphasizes, instability in one domain often triggers wider impacts in other domains, and space is no exception. For instance, if a nation were to disable an adversary's satellite during a conflict, it could provoke retaliatory measures that escalate into broader warfare. Without updated international governance structures to manage the militarization of space, the world risks entering a more fragmented and unstable order, where space becomes a battleground that undermines global peace (Taliaferro et al., 2009).

### **Effectiveness of existing international treaties and frameworks in governing the militarisation of space and preventing space-based conflicts**

The militarization of space has become a pressing concern in the modern global security landscape, prompting the need for robust international treaties and frameworks to manage and prevent space-based conflicts. Over the decades, several international agreements have been established to regulate the peaceful use of space, with the 1967 Outer Space Treaty (OST) serving as the foundational legal framework. However, as space technologies have evolved, the effectiveness of these treaties in addressing modern threats has come into question.

#### **The Outer Space Treaty: Strengths and Limitations:**

The 1967 Outer Space Treaty remains the cornerstone of international space law, establishing space as a domain to be used for peaceful purposes and prohibiting the placement of nuclear weapons or any other weapons of mass destruction in space (Johnson-Freese, 2016). One of the OST's key strengths is its near-universal ratification, with over 100 nations, including all major space-faring powers, as signatories. This broad adoption has helped maintain space as a largely demilitarized zone for decades. However, the treaty has significant limitations, particularly in its failure to address the development and deployment of conventional weapons in space. For instance, while the OST prohibits the placement of weapons of mass destruction on celestial bodies, it does not prevent the deployment of non-nuclear weapons or the use of anti-satellite (ASAT) technologies. Additionally, the OST lacks enforcement mechanisms, relying on the good faith of signatory nations to adhere to its provisions (Hitchens, 2019). As geopolitical tensions rise and space becomes more integrated into military strategies, these gaps have raised concerns about the treaty's capacity to prevent space-based conflicts.

#### **The Moon Agreement and its Limited Impact:**

The 1979 Moon Agreement, intended as a supplementary treaty to the OST, sought to further restrict the militarization of space by declaring the Moon and other celestial bodies the "common heritage of mankind" and prohibiting their use for military purposes (Reus-Smit & Snidal, 2021). However, the Moon Agreement has been largely ineffective due to its lack of widespread adoption, with only 18 countries ratifying the treaty and major space-faring nations such as the United States, Russia, and China refusing to sign.

The limited impact of the Moon Agreement reflects broader challenges in achieving international consensus on space governance. As more nations and private entities engage in space activities, the need for a more comprehensive and universally accepted regulatory framework becomes increasingly apparent. The failure of the Moon Agreement highlights the limitations of existing treaties in keeping pace with the rapid developments in space technology and the shifting priorities of space-faring nations (Buzan, 2020).

#### **Recent Efforts: The Prevention of an Arms Race in Outer Space (PAROS):**

In response to the growing militarization of space, the United Nations has advocated for the Prevention of an Arms Race in Outer Space (PAROS) initiative, aimed at preventing the weaponization of space through diplomatic negotiations. Despite its importance, progress on PAROS has been slow, with key nations, including the U.S., often resisting formal agreements that could limit their strategic military advantages in space (Weeden, 2020). The reluctance of major powers to fully commit to binding regulations on space militarization reflects the broader challenges facing international diplomacy in the era of great power competition. While discussions surrounding PAROS continue, the lack of concrete action has raised concerns that the window for preventing an arms race in space may be closing. The potential for space to become a contested and weaponized domain is increasing, necessitating more urgent and effective international efforts (Taliaferro et al., 2009).

### **5. Conclusion**

The study concluded that the militarization of space had been driven primarily by strategic motivations rooted in the competitive nature of international relations, as explained by structural realism. Nations, particularly major powers such as the United States, China, and Russia, acted in their self-interest to secure dominance in space, viewing it as essential to their national security and global power positions. This competition was driven by a need to protect and enhance space-based assets as part of broader geopolitical rivalries.

Furthermore, the study found that space militarization had escalated conflicts and triggered an arms race, with nations developing space-based weapons in response to perceived threats from rivals. This escalation reflected the security dilemma, where one nation's defensive measures were seen as offensive by others, leading to reciprocal military build-ups in space. These developments posed a significant threat to global stability, increasing the risk of miscalculations that could trigger larger conflicts.

Finally, the study concluded that existing international treaties, such as the 1967 Outer Space Treaty, were insufficient in preventing space-based conflicts. These frameworks lacked the necessary enforcement mechanisms and had not kept pace with technological advancements in space warfare. Therefore, there is urgent need for new, enforceable international agreements to manage the militarization of space effectively and prevent it from becoming the next major frontier of global conflict. Based on the above, the study concluded that:

- a. **Strengthen International Treaties and Frameworks:** Nations should collaborate to update and strengthen existing treaties, such as the Outer Space Treaty, to address modern technological advancements and close gaps in regulation. This includes establishing enforceable mechanisms to prevent the weaponization of space and ensure compliance by all space-faring nations, fostering transparency and trust in space activities.
- b. **Promote Cooperative Space Security Initiatives:** The international community should prioritize cooperation over competition by creating shared security frameworks for space. Joint efforts, such as multinational space monitoring



- systems and collaborative defense agreements, could reduce mistrust and prevent conflicts stemming from miscalculations or misunderstandings in space activities.
- c. Establish Clear Norms for Space Conduct: The global community should agree on clear norms and guidelines for space conduct, particularly regarding military activities. By outlining acceptable behaviors and punitive measures for violations, these norms can reduce the likelihood of an arms race and promote peaceful uses of space, ensuring stability and sustainability in space operations.

## REFERENCES

- [1] Buzan, B. (2020). *People, States, and Fear: An Agenda for International Security Studies in the Post-Cold War Era*. ECPR Press.
- [2] Dolman, E. C. (2005). *Astropolitik: Classical Geopolitics in the Space Age*. Routledge.
- [3] Glaser, C. L. (2022). *Rational Theory of International Politics: The Logic of Competition and Cooperation*. Princeton University Press.
- [4] Hitchens, T. (2019). *The Future of Space Governance: Key Issues and Challenges*. *The Space Review*.
- [5] Johnson-Freese, J. (2016). *Space Warfare in the 21st Century: Arming the Heavens*. Routledge.
- [6] Mearsheimer, J. J. (2001). *The Tragedy of Great Power Politics*. W.W. Norton & Company.
- [7] Muirhead, B., & Lal, B. (2019). "Space Debris and the Potential Impact on Space Security." *Journal of Space Policy*, 35(2), 102-114.
- [8] Mutschler, M. (2020). *Militarizing Outer Space: Arms Control and the Challenges of Security*. Springer.
- [9] Reus-Smit, C., & Snidal, D. (2021). *The Oxford Handbook of International Relations*. Oxford University Press.
- [10] Taliaferro, J. W., Lobell, S. E., & Ripsman, N. M. (2009). *Neoclassical Realism, the State, and Foreign Policy*. Cambridge University Press.
- [11] Waltz, K. (1979). *Theory of International Politics*. McGraw-Hill.
- [12] Waltz, K. N. (1979). *Theory of International Politics*. McGraw-Hill.
- [13] Weeden, B. (2020). "The Kessler Syndrome: A Real Threat to Space Operations." *International Journal of Space Security*, 42(1), 67-79